

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An apparatus for detecting chemotaxis of cells which comprises:

a cell-holding well having an opening for injecting cells;

a specimen-holding well having an opening for injecting a specimen;

a channel which connects said cell-holding well and specimen-holding well up with each other and has resistance to the passage of cells, and which detects chemotaxis of cells by observing a passage of cells in said channel from said cell-holding well to said specimen-holding well caused by a concentration gradient of said specimen formed in a stationary liquid in said channel;

a means of transporting said liquid from said cell-holding well to said specimen-holding well by an injection or an aspiration discharge of said liquid and then stopping the transportation of said liquid after said injection or said aspiration discharge of said liquid in order to control a position of each cell in said cell-holding well; and

a means of sealing said opening(s) in one or both of said cell-holding well and said specimen-holding well for preventing said liquid from an unexpected transportation thereof in said channel while detecting chemotaxis of cells.

2. (Previously Presented) The apparatus for detecting chemotaxis of cells as claimed in claim 1, wherein said means of transporting a liquid and stopping the transportation thereof is a member selected from a pulse pump and a syringe.

3. (Previously Presented) The apparatus for detecting chemotaxis of cells as claimed in claim 1, wherein said means of sealing the opening is a member selected from among a flexible stopper, a slide-type switching member, a tap, a valve and a combination thereof.

4. (Currently Amended) The apparatus for detecting chemotaxis of cells as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein

 said means of sealing is a means of sealing said openings in both of said cell-holding well and said specimen-holding well, and said opening in said specimen-holding well is closed when said opening in said cell-holding well is opened and then said opening in said cell-holding well is closed when said opening in said specimen-holding well is opened.

5. (Cancelled)

6. (Currently Amended) The apparatus for detecting chemotaxis of cells as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein plural number of units, each of which units comprises said cell-holding well, said specimen-holding well and said channel, are connected to only one means of transporting a liquid and a stopper to stop the transportation thereof via said injection pipe so as to control a position of each cell in said individual cell-holding well.

7. (Previously presented) The apparatus for detecting chemotaxis of cells as claimed in claim 4, wherein said means of sealing is a slide-type switching member.

8-16. (Canceled)

17. (Previously presented) An integration apparatus for detecting chemotaxis of cells which consists of a plural number of units with use of said apparatus for detecting chemotaxis of cells as claimed in claim 1 as a single unit.

18. (New) An apparatus for detecting chemotaxis of cells which comprises:

- a cell-holding well having an opening for injecting cells;
- a specimen-holding well having an opening for injecting a specimen;
- a channel which connects said cell-holding well and specimen-holding well up with each other and has resistance to the passage of cells, and which detects chemotaxis of cells by observing a passage of cells in said channel from said cell-holding well to said specimen-holding well caused by a concentration gradient of said specimen formed in a stationary liquid in said channel;
- a means of transporting said liquid from said cell-holding well to said specimen-holding well by an injection or an aspiration discharge of said liquid and then stopping the transportation of said liquid after said injection or said aspiration discharge of said liquid in order to control a position of each cell in said cell-holding well; and
- a means of sealing said opening(s) in one or both of said cell-holding well and said specimen-holding well for preventing said liquid from an unexpected transportation thereof in said channel while detecting chemotaxis of cells;

wherein said means of transporting said liquid and stopping the transportation thereof is connected to said cell-holding well and/or said specimen-holding well via an injection pipe and/or an aspiration discharge pipe.

19. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 18, wherein said means of transporting said liquid and stopping the transportation thereof is connected to said cell-holding well via the injection pipe.

20. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 18, wherein said means of transporting said liquid and stopping the transportation thereof is connected to said specimen-holding well via the aspiration discharge pipe.

21. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 18, wherein said means of transporting said liquid and stopping the transportation thereof is a pulse pump or a syringe.

22. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 18, wherein said means of sealing the opening is a member selected from the group consisting of a flexible stopper, a slide-type switching member, a tap, a valve and a combination thereof.

23. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 22, wherein said means of sealing is a means of sealing said openings in both of said cell-holding

well and said specimen-holding well, and said openings in said specimen-holding well is closed when said openings in said cell-holding well is opened and then said openings in said cell-holding well is closed when said openings in said specimen-holding well is opened.

24. (New) The apparatus for detecting chemotaxis of cells as claimed in claims 18, wherein said cell-holding well and said specimen-holding well are connected via an injection pipe joined to said cell-holding well, an aspiration discharge pipe joined to said specimen-holding well and said means of transporting a liquid, and a stopper to stop the transportation thereof between said pipes, to form a structure in which said liquid is circulated.

25. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 18, wherein said cell-holding well has an injection pipe while a specimen-holding well has an aspiration discharge pipe and a specimen-injection port is sealed with a flexible stopper, and wherein said injection pipe and said aspiration discharge pipe are connected by a means of transporting which circulates a liquid in a single direction.

26. (New) An apparatus for detecting chemotaxis of cells which comprises:
a cell-holding well having an opening for injecting cells;
a specimen-holding well having an opening for injecting a specimen;
a channel which connects said cell-holding well and specimen-holding well up with each other and has resistance to the passage of cells, and which detects chemotaxis of cells by observing a passage of cells in said channel from said cell-holding well to said specimen-holding

well caused by a concentration gradient of said specimen formed in a stationary liquid in said channel;

a means of transporting said liquid from said cell-holding well to said specimen-holding well by an injection or an aspiration discharge of said liquid and then stopping the transportation of said liquid after said injection or said aspiration discharge of said liquid in order to control a position of each cell in said cell-holding well; and

a means of sealing said opening(s) in one or both of said cell-holding well and said specimen-holding well for preventing said liquid from an unexpected transportation thereof in said channel while detecting chemotaxis of cells;

wherein said cell-holding well and said specimen-holding well are connected via an injection pipe joined to said cell-holding well, an aspiration discharge pipe joined to said specimen-holding well and said means of transporting a liquid, and a stopper to stop the transportation thereof between said pipes, to form a structure in which said liquid is circulated.

27. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 26, wherein said means of transporting a liquid and stopping the transportation thereof is a pulse pump or a syringe.

28. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 26, wherein said means of sealing the opening is a member selected from the group consisting of a flexible stopper, a slide-type switching member, a tap, a valve and a combination thereof.

29. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 26, wherein

said means of sealing is a means of sealing said openings in both of said cell-holding well and said specimen-holding well, and said opening in said specimen-holding well is closed when said opening in said cell-holding well is opened and then said opening in said cell-holding well is closed when said opening in said specimen-holding well is opened.

30. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 26, wherein plural number of units, each of which units comprises said cell-holding well, said specimen-holding well and said channel, are connected to only one means of transporting a liquid and a stopper to stop the transportation thereof via said injection pipe so as to control a position of each cell in said individual cell-holding well.

31. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 29, wherein said means of sealing is a slide-type switching member.

32. (New) An integration apparatus for detecting chemotaxis of cells which consists of a plural number of units with use of said apparatus for detecting chemotaxis of cells as claimed in claim 26 as a single unit.

33. (New) An apparatus for detecting chemotaxis of cells which comprises:
a cell-holding well having an opening for injecting cells;

a specimen-holding well having an opening for injecting a specimen;
a channel which connects said cell-holding well and specimen-holding well up with each other and has resistance to the passage of cells, and which detects chemotaxis of cells by observing a passage of cells in said channel from said cell-holding well to said specimen-holding well caused by a concentration gradient of said specimen formed in a stationary liquid in said channel;

a means of transporting said liquid from said cell-holding well to said specimen-holding well by an injection or an aspiration discharge of said liquid and then stopping the transportation of said liquid after said injection or said aspiration discharge of said liquid in order to control a position of each cell in said cell-holding well; and

a means of sealing said opening(s) in one or both of said cell-holding well and said specimen-holding well for preventing said liquid from an unexpected transportation thereof in said channel while detecting chemotaxis of cells;

wherein said cell-holding well has an injection pipe while a specimen-holding well has an aspiration discharge pipe and a specimen-injection port is sealed with a flexible stopper, and wherein said injection pipe and said aspiration discharge pipe are connected by a means of transporting which circulates a liquid in a single direction.

34. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 33, wherein said means of transporting a liquid and stopping the transportation thereof is a pulse pump or a syringe.

35. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 33, wherein said means of sealing the opening is a member selected from the group consisting of a flexible stopper, a slide-type switching member, a tap, a valve and a combination thereof.

36. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 33, wherein

said means of sealing is a means of sealing said openings in both of said cell-holding well and said specimen-holding well, and said opening in said specimen-holding well is closed when said opening in said cell-holding well is opened and then said opening in said cell-holding well is closed when said opening in said specimen-holding well is opened.

37. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 33, wherein plural number of units, each of which units comprises said cell-holding well, said specimen-holding well and said channel, are connected to only one means of transporting a liquid and a stopper to stop the transportation thereof via said injection pipe so as to control a position of each cell in said individual cell-holding well.

38. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 36, wherein said means of sealing is a slide-type switching member.

39. (New) An integration apparatus for detecting chemotaxis of cells which consists of a plural number of units with use of said apparatus for detecting chemotaxis of cells as claimed in claim 33 as a single unit.

40. (New) An apparatus for detecting chemotaxis of cells which comprises:

- a cell-holding well having an opening for injecting cells;
- a specimen-holding well having an opening for injecting a specimen;
- a channel which connects said cell-holding well and specimen-holding well up with each other and has resistance to the passage of cells, and which detects chemotaxis of cells by observing a passage of cells in said channel from said cell-holding well to said specimen-holding well caused by a concentration gradient of said specimen formed in a stationary liquid in said channel;
- a means of transporting said liquid from said cell-holding well to said specimen-holding well by an injection or an aspiration discharge of said liquid and then stopping the transportation of said liquid after said injection or said aspiration discharge of said liquid in order to control a position of each cell in said cell-holding well; and
- a means of sealing said opening(s) in one or both of said cell-holding well and said specimen-holding well for preventing said liquid from an unexpected transportation thereof in said channel while detecting chemotaxis of cells;

wherein said cell-holding well having an opening for injecting cells and a specimen-holding well having an opening for injecting a specimen which are formed by a substrate having

a raised bank in the middle thereof and a glass substrate and are divided into each other by said raised bank.

41. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 40, wherein said means of transporting a liquid and stopping the transportation thereof is a pulse pump or a syringe.

42. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 40, wherein said means of sealing the opening is a member selected from the group consisting of a flexible stopper, a slide-type switching member, a tap, a valve and a combination thereof.

43. (New) The apparatus for detecting chemotaxis of cells as claimed in 40, wherein said means of sealing is a means of sealing said openings in both of said cell-holding well and said specimen-holding well, and said opening in said specimen-holding well is closed when said opening in said cell-holding well is opened and then said opening in said cell-holding well is closed when said opening in said specimen-holding well is opened.

44. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 40, wherein said cell-holding well and said specimen-holding well are connected via an injection pipe joined to said cell-holding well, an aspiration discharge pipe joined to said specimen-holding well and said means of transporting a liquid, and a stopper to stop the transportation thereof between said pipes, to form a structure in which said liquid is circulated.

45. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 40, wherein plural number of units, each of which units comprises said cell-holding well, said specimen-holding well and said channel, are connected to only one means of transporting a liquid and a stopper to stop the transportation thereof via said injection pipe so as to control a position of each cell in said individual cell-holding well.

46. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 43, wherein said means of sealing is a slide-type switching member.

47. (New) The apparatus for detecting chemotaxis of cells as claimed in claim 40, wherein said cell-holding well has an injection pipe while a specimen-holding well has an aspiration discharge pipe and a specimen-injection port is sealed with a flexible stopper, and wherein said injection pipe and said aspiration discharge pipe are connected by a means of transporting which circulates a liquid in a single direction.